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Office of Juvenile Justice and Delinquency Prevention

Reports of the National Juvenile Justice Assessment Centers

An Assessment of Evaluations of Drug Abuse Prevention Programs

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U.S. Department of Justice
Law Enforcement Assistance Administration
Office of Juvenile Justice and Delinquency Prevention

National Institute for Juvenile Justice and Delinquency Prevention

Reports of the National Juvenile Justice Assessment Centers

An Assessment of Evaluations of Drug Abuse Prevention Programs

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June 1980

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EXECUTIVE SUMMARY

A literature search produced 52 evaluations of drug abuse prevention programs. These evaluations were examined in terms of the prevention program's strategy, type of drug addressed, target population, and the evaluation's design and outcome measures. The results of this examination showed the following:

- The strategies were best characterized by one or some combination of informational, values-oriented, student-participation-in-alternatives, and counseling strategies. The informational strategy was the most frequently utilized (35%) followed by the value-oriented strategy (19%). Thirty-two percent of the programs utilized some combination of these four strategies.
- The majority of the programs (88%) focused on drugs in a collective manner; only six were drug specific.
- The age/grades of the target populations ranged from fourth graders to adults. The predominant age/grades were senior high grades (35%) and a combination of age/grades (33%).
- In over half of the evaluations (54%), conclusions could not be drawn from the evaluations because of inadequacies in design.
- The major outcome measures utilized by the evaluations were attitudes toward the use of drugs, knowledge about drugs (e.g., pharmacology, physiological effects, drug laws), reported drug use, or some combination of these. Only half of the evaluations used at least one outcome measure pertaining to drug abusing behavior.

Out of the 52 evaluations, there were nine which utilized both an adequate design and at least one outcome measure of drug abusing behavior. For each of these evaluations there is a brief discussion of the program, its evaluation, and the evaluation's findings and limitations. In spite of the small number of cases, the findings tell us the following about the effectiveness of drug abuse prevention programs:

- Two programs used only an informational strategy, and both programs were ineffective in preventing drug abuse.
- Three programs used only a values-oriented strategy; two were effective and one was ineffective.
- One program used only a counseling strategy (employing three different counseling techniques), and it was found to be ineffective.
- One program used student-participation-in-alternatives as its sole strategy, and the evaluation found the program to be effective.
- Only one program used a combination of strategies (informational, which was discontinued; counseling; and student-participation-in-alternatives); the evaluation found the program to be effective.
- The last of the nine evaluations was not an evaluation of a program but of the impact of a deterrent strategy – the 1973 New York State drug law. The evaluation found that the 1973 drug law was ineffective because of the criminal justice system's inability to implement the law so that it would function as a deterrent.

In summary, this review and assessment has found that 1) adequate evaluations of drug abuse prevention programs can be performed, but few are; 2) program strategies and target populations need to be discussed in greater detail and linked to the presumed causes of drug abuse; and 3) although too few adequate evaluations exist to speak confidently about what works, values-oriented and student-participation-in-alternatives strategies appear to warrant further experimentation.

AN ASSESSMENT OF EVALUATIONS OF DRUG ABUSE PREVENTION PROGRAMS*

I. INTRODUCTION

The purpose of this paper is to review and assess evaluations of drug abuse prevention programs for juveniles. This paper differs from similar efforts (e.g., Swisher, 1974; Goodstadt, 1974; Emrich et al., 1975) in that it focuses on nine evaluations which were selected because they utilized adequate designs and at least one outcome measure of drug abusing behavior. For each of these evaluations there is a brief discussion of the program, its evaluation, and the evaluation's findings and limitations.

A search of the literature under various headings pertaining to drugs and youth (see Appendix A) produced a total of 603 citations. Among these citations were 52 evaluations of drug abuse prevention programs for juveniles, and they constitute the subject of this assessment. The paper does not provide descriptions of all 52 evaluations; however, Appendix B presents a summary description of each one.

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*The authors wish to acknowledge the contributions made by several individuals. Eric Schaps sent copies of several program evaluations along with a preliminary draft of a paper which reviews 75 impact studies of primary drug prevention programs (authored by himself and colleagues at the PYRAMID Project, Pacific Institute for Research and Evaluation, Walnut Creek, California). Donald English reviewed several evaluation documents. David Hawkins and James Henney provided comments on an earlier version of this paper.

Throughout this paper we have used the term "drug abuse" to describe both the use and misuse (self-harming use) of drugs, because all drug use (except, of course, the use of prescribed or proprietary drugs for medical purposes) is illegal and generally viewed as potentially harmful for juveniles. Another term which requires clarification is "prevention." As used in the context of "drug abuse prevention program," "prevention" refers to pure or primary prevention programs - those that attempt to stop drug abuse behavior before it occurs.

The following sections examine the theoretical assumptions of drug abuse prevention programs, the type of drug and the target population, the quality of evaluation designs, outcome measurement, and nine selected evaluations. The final section provides a summary of the evaluation issues addressed in this assessment.

II. UNDERLYING THEORETICAL ASSUMPTIONS

Ideally, the prevention of any social problem should be based on a theory which explains clearly the causes of that problem. Seldom, however, do we find the conscious application of theory when a program is set in place to deal with a particular social problem. More often we find a discussion of assumptions in which the creators of a program present justifications for their strategies in terms of statements about the cause or causes of a social problem and why and how the strategies will affect those causes. Such assumptions are called theoretical assumptions because each assumption is an explanation of cause and, therefore, a theory. Unfortunately, these statements of theory are not related to the cumulative base of knowledge on theories of social problems. Recognizing that this base of knowledge is both complex and confusing, social scientists are strongly encouraging those who plan and implement programs to at least specify the assumptions about

causes upon which programs are based.

In the field of juvenile delinquency prevention, LaMar Empey has discussed the need for the development of clear assumptions. In a paper titled "A Model for the Evaluation of Programs in Juvenile Justice," he has stated that

> Anytime a program is set up, or anytime one technique is chosen over another, someone has an idea in the back of his or her mind that will make a difference – that is somehow preferable to other programs and techniques. That person, in other words, does have a theory – however ill stated – as to what leads to delinquency and how best it can be dealt with. What is needed, therefore, is to make that theory explicit rather than to leave it vague or amorphous. If this were done, both the action and research components of the innovation would be improved (Empey, 1977: 6-7).

For the majority of programs dealing with social problems, however, theory or theoretical assumptions are not discussed, and, as a result, individuals assessing programs and their evaluations (if any) are left to ferret out what are called the "underlying theoretical assumptions" of a program. Through a post hoc examination of the strategy utilized by a program, one infers the underlying theoretical assumptions. For example, if the strategy used by a delinquency prevention program is that of providing jobs for youth, one would infer that the underlying theoretical assumption is that delinquency results when youth do not have adequate economic resources.

In our assessment of evaluations of drug abuse prevention programs, we found that in most cases discussions of theory and theoretical assumptions were left "vague or amorphous." Because of this, we proceeded in the manner described above and examined the strategy implemented by each program as the best indicator of each program's theoretical assumptions. We were able to classify nearly all of the strategies as either informational, values-oriented, student-participation-in-alternatives (the term

"student" is used frequently because most programs were carried out in a school setting), counseling, or some combination of these. The informational strategies consisted of the presentation of information about the physiological, psychological, and legal aspects of drug use. The underlying theoretical assumption is that the presentation of accurate information will affect behavior; that is, when provided with the "facts," rational youth will decide not to try drugs or will decide to discontinue their use of drugs. Usually these strategies rely on information-giving through films, brochures, and teacher lectures. Recent programs with an informational strategy have also used guest speakers and panel discussions by doctors, lawyers, policemen, and former drug abusers.

A values-oriented strategy usually focused on values clarification and decision-making skills. The underlying theoretical assumption is that when students become aware of their needs, aspirations, and goals and also aware of the relationship between current behavior and the achievement of short-term and long-range goals, the students will choose behaviors which favor the achievement of their goals. The desired outcome is that the students will recognize that drug using behavior not only does not contribute to the achievement of socially-valued goals but may interfere with or even prevent the achievement of these goals.

The student-participation-in-alternatives strategies, as the name suggests, consisted of involving students in activities which were alternatives to drug use. The underlying theoretical assumption of this strategy is that students who gain the knowledge, motivation, and skills necessary to create active, fulfilling, and meaningful lives will not be attracted to drug use. There were many different types of alternative activities, and they included school sponsored community involvement projects, recreational activities, arts and crafts programs, career training opportunities, and ecology projects. It seems

ironic that these programs are referred to as "alternatives," for traditionally these activities have been viewed as "mainstream" activities and drug abuse has been viewed as an "alternative" activity.

The counseling strategies consisted of various forms of counseling including one-to-one counseling, group counseling, peer counseling, and rap sessions. They attempted to provide warm, receptive, and supportive environments in which students talked freely about worries and feelings without fear of rejection or ridicule. The underlying assumption is that drug abuse is a way of coping with frustration brought about by troublesome situations and unresolved problems; thus, drug abuse is prevented by reducing frustration through the acceptance of troublesome situations and the resolution of problems.

Table 1 presents the strategies used by the 52 evaluations which we reviewed. Nearly all of the programs used one of the four strategies just described or a combination of these strategies. The table shows that the informational strategy was the most frequently used strategy, employed by 35% of the programs. The values-oriented strategy is the next most frequently used strategy and was used by 19% of the programs. Also worthy of note but less obvious is that nearly one-third of the programs used some combination of the four strategies.

III. TYPE OF DRUG AND TARGET POPULATION

Our examination of the evaluations also considered the type of drug on which the drug abuse program focused. As can be seen in Table 2, the majority of the programs (88%) treated drugs in a collective manner, presumably including tobacco, alcohol, psychedelic drugs, amphetamines, barbiturates, marijuana, cocaine, opium, and heroin. Only six of the programs were drug-specific: four focused on alcohol, one on tobacco, and one on heroin.

Table 1: Strategies of Drug Prevention Programs*

Strategy	%	N
Informational (Info)	35%	(18)
Values-oriented (V-O)	19%	(10)
Student-participation-in-alternatives (S-P)	4%	(2)
Counseling (C)	4%	(2)
Info/V-O	8%	(4)
Info/S-P	2%	(1)
V-O/S-P	2%	(1)
V-O/C	2%	(1)
Info/V-O/S-P	6%	(3)
Info/S-P/C	2%	(1)
Info/V-O/S-P/C	6%	(3)
C/S-P	2%	(1)
Info/V-O/C	2%	(1)
Other**	6%	(3)
Not Specified	2%	(1)
TOTAL	102%***	(52)

*Where more than one strategy is listed, the strategies were used alone or in combination.
**Other includes severe criminal penalties for drug sale or use, communication skills development (in combination with V-O/S-P/C), and transmission of information and attitudes from parents to children.
***This figure exceeds 100% due to rounding.

Table 2: Types of Drugs

Type	%	N
Drugs (general or several)	88%	(46)
Alcohol	8%	(4)
Tobacco	2%	(1)
Heroin	2%	(1)
TOTAL	100%	(52)

The age/grades of the target populations are presented in Table 3. The range is from fourth graders to adults; the two predominant age/grades are senior high grades (35%), and a combination of age/grades (33%). The table suggests that there is some difference of opinion concerning which age/grade constitutes the most relevant target population for drug abuse prevention programs, although the evaluations reviewed here contained little discussion of and justification for the selection of target populations. It is our impression that senior high school students have been targeted most frequently because of concern by parents, school personnel, and community members about existing drug abuse within high schools.

Table 3: Age/Grade of Target Population

Age/Grade	%	N
Elementary (4-6 grades)	4%	(2)
Junior High (7 & 8 grades)	12%	(6)
Senior High (9-12 grades)	35%	(18)
College	4%	(2)
Adults (teachers)	4%	(2)
Combination (of above)	33%	(17)
Not specified	10%	(5)
TOTAL	102%*	(52)

*This figure exceeds 100% due to rounding

IV. QUALITY OF EVALUATION DESIGN

It is impossible to know about the effectiveness of a drug abuse prevention program unless the program has an adequate evaluation design, for without an adequate evaluation design we can have no confidence in the evaluation's findings. In our review of the evaluations, the

quality of the designs was assessed by answering the question, "Can conclusions be drawn from the evaluation design?" Responses of "Yes," "Possibly," and "No" summarize our judgments about the quality of the designs. These assessments were based on a combination of (a) the methodological rigor of the design itself and (b) the number of groups to which it was applied. The level of rigor of the design pertains to its ability to cope with potential threats to the internal validity of the results (Campbell and Stanley, 1963: 5-6). The greater the number of potential threats to validity (e.g., the maturation of subjects, the loss of subjects, and the effects of the pretest on the posttest) controlled by the design, the more rigorous the design. The group to which a design is applied refers to that population of subjects, such as the grades within a school, the schools within a school district, or the school districts within a state, from which we draw the experimental and the control groups.

The following criteria were used to determine if conclusions could be drawn from the evaluation design. An affirmative response was given for those evaluation (1) which utilized a true experimental design, such as the Pretest-Posttest Control Group Design or the Posttest Only Control Group Design (Campbell and Stanley, 1963: 13-34) or (2) which applied a quasi-experimental design – such as the Nonequivalent Control Group Design or the Multiple Time-Series Design (Campbell and Stanley, 1963: 47-50; 55-57) – to three or more groups of subjects and the findings were in agreement. The "No" response was given for those evaluations (1) which used a design less rigorous than a quasi-experimental design, (2) which applied a quasi-experimental design to only one group, or (3) which applied a quasi-experimental design to two or more groups and the findings were not in agreement. It should be noted that for some evaluations the response was reduced a category because the author of the eval-

uation pointed out a specific problem in implementing the evaluation design which reduced the credibility of the findings.

Table 4 presents the responses to the question, "Can conclusions be drawn from the evaluation design?" In over half of the evaluations, 28 out of 52, conclusions could not be drawn from the evaluations because of inadequacies in design. This is both a very telling and discouraging statement, for it appears that much effort and many dollars have been spent on conducting evaluations from which little or nothing could be learned about program effectiveness.

Table 4: Can Conclusions Be Drawn From the Evaluation Design?

Conclusions	%	N
Yes	33%	(17)
Possibly	13%	(7)
No	54%	(28)
TOTAL	100%	(52)

V. OUTCOME MEASUREMENT

We now turn from issues of design to those of outcome measurement. Outcome measurement refers to the measure or measures used in an evaluation which enable us to draw conclusions about a program's effectiveness. In the case of drug abuse prevention programs, the ideal outcome measure is one which will allow us to determine the onset, increase, or decrease in drug abusing behavior engaged in by the subjects in the program. Obtaining precise measurement of the actual occurrence of illegal and almost always private behavior – such as drug abuse – for groups of youth is nearly an impossible task, and evaluators must content themselves with techniques of gathering information which only allow them to estimate actual occurrence.

Table 5: Type of Outcome Measure

Type	%	N
Attitudes	21%	(11)
Attitudes & Knowledge	27%	(14)
Attitudes & Use	15%	(8)
Attitudes, Knowledge, & Use	21%	(11)
Attitudes, Knowledge, & Intended Use	2%	(1)
Use	8%	(4)
Attitudes, Use, & Other*	4%	(2)
Knowledge & Use	2%	(1)
TOTAL	100%	(52)

*Other includes school performance, attendance, and interpersonal relationships.

Table 5 presents the outcome measures used by the evaluations. These measures are predominantly of attitudes, knowledge, use, or some combination of these. The data indicate that only half of the evaluations used at least one outcome measure pertaining to drug behavior (i.e., use). When the focus of drug abuse prevention programs is on the prevention or decrease of drug abusing behavior, it is again discouraging to discover that half of the evaluations used outcome measures that could not allow the evaluators to determine the programs' effectiveness in preventing drug abusing behavior.

All of the evaluations (52%) which used knowledge as an outcome measure used it in conjunction with at least one other outcome measure. The measurement of knowledge about drugs (e.g., chemical composition, classification, physiological and psychological effects, and laws pertaining to drug use and possession) appears to be an appropriate outcome measure for assessing the immediate effectiveness of an informational strategy, the purpose of which is to increase the subjects' knowledge about drugs

– which, in turn, is expected to result in "rational decisions" about drugs.

It appears that many evaluators have made two assumptions in utilizing respondents' attitudes towards the use of drugs as an outcome measure. In their employment of attitude measures, they assume that attitudes are both indicators of *current* behavior and predictors of *future* behavior. We do not disagree with their assumptions. Rather, our concern is with the accuracy of the technique and the failure of evaluators to even discuss the technique's ability to reflect current behavior and predict future behavior. With regard to the use of attitudes to measure current behavior, it is difficult to understand why an outcome measure which actually pertains to behavior was not utilized. Occasionally there are circumstances under which this is not the case; for example, Tennant, Weaver, and Lewis (1973) were forbidden by a school district to ask subjects about their illegal use of drugs.

On the whole, however, an outcome measure which pertains to behavior is to be preferred, and one increasingly popular technique for estimating drug abusing behavior is the anonymous self-report method. Nearly all of the outcome measures which we classified under "use" utilized the self-report method. This method usually consists of a series of items on a questionnaire which asks the subject to report the extent of his or her behavior pertaining to several drugs over a specified period of time. In addition to providing accurate information (Clark and Tifft, 1966; Kulik et al., 1968; Hindelang et al., 1978), this method is easy, inexpensive, and time efficient.

The ability of attitudes to predict behavior continues to be disputed by social psychologists and others. Rokeach (1968) has claimed that attitudes are direct antecedents to behavior, whereas Bem (1970) has suggested that it is more likely that behavior forms attitudes. Our point here is actually quite simple: Evaluators need to address the

limitations of their outcome measurements.

VI. DISCUSSION OF NINE PROGRAMS AND THEIR EVALUATIONS

This section provides brief descriptions of the nine programs for which evaluations were performed that utilized adequate designs and outcome measures pertaining to past or current drug using behavior. In most cases, the description of the program and the evaluation is based solely on information provided in the evaluation document. Each description is followed by comments which note limitations and reservations. The section concludes with a summary of the findings regarding these drug abuse prevention programs.

1. Teaching Facts About Drugs: Pushing or Preventing (Stuart, 1974)

During the 1971-72 academic year, Stuart (1974) conducted a study of drug education for seventh and ninth graders in two junior high schools in an upper middle class suburban university community; the study was funded by grants from the Office of Drug Abuse and Alcoholism, State of Michigan, and the Board of Education, Ann Arbor, Michigan. The drug education program was presented in one class period each week for ten weeks (during either the first or second semester); it was designed to communicate facts about drugs. During the first semester the drug education program was presented either by teachers or students, and during the second semester it was presented only by teachers. Within each of these two formats, there were three content divisions: the first focused on "the lesser drugs – alcohol, tranquilizers such as Valium, marijuana, hashish, nicotine, and caffeine" (Stuart, 1974: 191); the second focused on "the major drugs – LSD and other hard hallucinogens, amphetamines, barbiturates, and narcotics" (Stuart, 1974: 191); and the third focused on a combination of both. A total of 935 subjects

(509 seventh graders and 426 ninth graders) were assigned randomly to an experimental group (63.5%) or a control group (36.5%). All subjects received the follow-up test. The test instrument consisted of an anonymous questionnaire which contained items concerning drug knowledge, attitudes, and use.

The results of this study indicate that the experimental subjects exhibited greater drug knowledge and use and fewer worries than the control subjects at posttest and at follow-up. Furthermore, these results were unaffected by the format or content of the presentations. Stuart concluded that the relationship between drug education and drug use is probably complex, for while there is a strong association between drug education and drug use, increased knowledge alone does not predict increased use. Thus, other factors (not examined by the evaluation) in addition to drug knowledge must influence drug use.

Comments:

A. The comments about this study are few, for it appears to have been well designed, executed, and presented. The author has shown considerable concern about validity, reliability, limitations, and generalizability. One of his points about generalizability deserves repeating here, and that is that these results pertain to subjects in a dominantly upper middle class, academic community, and therefore they should not be generalized to other populations in different settings.

B. No information was presented on the number of subjects who did not remain for the duration of the study and the possible effect of this on the findings.

2. Drug Education Program for Secondary School Students (Weaver and Tennant, 1973)

This program was carried out in 1969 in the Houston area. The experimental group consisted of 452 eighth

grade students in three schools in one district, and the control group consisted of 380 eighth grade students in three schools in another school district. The districts were similar with respect to the socioeconomic status of their residents. Both groups received the standard drug program (then operating in the Houston area) of drug education films and one or two school assemblies. In addition, the experimental group received a three-week program "taught by specially trained physical education teachers. The program utilized a commercially prepared purchased format consisting of advanced methods including program texts, films, case studies, and role-playing by students to generate enthusiasm, decision-making involvement, and sensitivity to human problems. The program cost $4.00 per student" (Weaver and Tennant, 1973: 813).

The evaluators, Weaver and Tennant (1973), administered anonymous posttests to both groups at the end of the special program, and nine months later they administered another anonymous posttest to 327 members of the experimental group who could be located. The results of the first posttest indicated that the experimental group had greater knowledge about drugs. However, there was no statistically significant difference between the two groups in regard to drug use (4.5% of the experimental group and 2.5% of the control group indicated drug use five or more times a week).

Comments:

A. This evaluation is presented in a brief but concise journal article and lacks many of the details one would like to have when assessing an evaluation.

B. The schools from which the control group was drawn were described as being similar in socioeconomic status to those from which the experimental group was drawn, but no data were presented or discussed which demonstrate that the two groups were comparable.

C. The nine-month posttest for the experimental group showed a slight decrease in drug knowledge, an increase in drug experimentation, and no change in drug use of five or more times a week. This information is difficult to interpret, however, without a posttest for the control group as well. Also, no effort was made to determine the impact on the results of a loss of 28% of the original experimental subjects.

D. While the authors presented information on the cost of the special program and described the program as being costly, no information was presented on the cost of other programs which could be used for making a comparison. For example, information on the cost of the existing drug education program in the Houston area would have been useful.

3. Alternatives and Values Clarification (Slimmon, 1973)

Funded by the California Department of Mental Health, this drug abuse prevention program was conducted in Marin County public high schools from 1970 to 1973. Approximately 2000 high school students participated each year in at least one of three programs offered. These included values clarification lessons in the classroom, alternative activities on or near the high school campus, and prevention drug lectures in health education classes. In the values clarification program, students consciously examined their particular needs and interests so that irrational high-risk behavior would appear less desirable. The alternative activities program offered such popular activities as aikido, tai chi, gymnastics, mysticism, and astrology as a diversion from drug activities. The drug lectures provided information about the effects of drugs and drug abuse.

The evaluation, performed by Lee Slimmon (1973), tested the effectiveness of only the values clarification

program. The evaluation is part of an Annual Report (dated July 10, 1973) to the California Department of Mental Hygiene and is described as only a preliminary analysis of the data gathered pertaining to the values clarification strategy. The first experimental group consisted of 34 students who had received six hours of values clarification; the second experimental group consisted of 38 students who had received nine hours; and the third experimental group consisted of five students who had received fifteen hours. The control group consisted of 29 students who had been matched to the experimental subjects for school and age. Student responses to pretest and posttest questionnaires indicated that all three experimental groups exhibited significant reduction in substance abuse patterns relative to the control group's pattern.

Comments:

A. As noted, this evaluation is only a preliminary report, and as such it lacks a comprehensive discussion of the evaluation and a comprehensive presentation of data and tests of statistical significance.

B. The sample sizes are relatively small, especially for the experimental group receiving 15 hours of values clarification (N=5).

C. Although not discussed, the population from which the samples were drawn is very likely to be unique. Marin County is a wealthy county, and therefore it may be difficult to generalize the findings from this study to other populations.

4. Alcohol Education Program (Williams et al., 1968)

Funded by the Massachusetts Department of Public Health, this program operated in Boston area junior and senior high schools during the mid-1960's. The overall objective of the program was to reduce the incidence of alcoholism in the student population. However, the immediate goal was to prevent excessive drinking by

encouraging the development of attitudes found in moderate-drinking groups. Three particular attitudes were stressed: tolerance for alcohol abstinence, tolerance for the temperate social use of alcohol, and intolerance for excessive drinking. The program's strategy consisted of one week of small-group discussions, with each group composed of 8 to 12 students moderated by an adult group leader. These discussions were structured so that the students actively examined their own and their peers' attitudes about drinking, as well as receiving information about the detrimental effects of alcohol abuse. By clarifying their attitudes and values about alcohol, the students were better equipped to make mature and responsible decisions about drinking.

The evaluation, performed by Allan S. Williams et al. (1968), was carried out in an all-male Catholic high school located in an upper middle class Boston suburb. At the time the program was implemented, the school was in its third year of operation, and the eleventh grade boys were then the highest grade in the school. The evaluation was carried out at this school because of the school's invitation to Williams and his colleagues to undertake research on alcohol education. There were 205 juniors who participated in this study; 111 had been assigned to one of twelve experimental groups, and 94 had been assigned to one of ten control groups. Student responses to pretest and posttest questionnaires indicated that the attitudes of the experimental group toward the *moderate* use of alcohol had become more favorable than those of the control group. The favorable attitudes of the experimental group toward *excessive* use did not decrease significantly, but those of the control group increased significantly.

The following paragraph presents the authors' findings which pertain to drinking behavior:

> There was a nonsignificant tendency for more experimental subjects than controls to have become intoxicated in the year after the study. Among those who got intoxicated, however, there was a very strong tendency for experimental subjects to have become intoxicated less often than controls. Thus, while slightly more experimental than control subjects got intoxicated, it appears that the program discouraged teenagers from becoming intoxicated often. This effect is a positive and encouraging one; it is the first evidence that teen-aged behavior can be modified in a positive way by education (Williams et al., 1968: 701).

Comments:

A. Unlike most drug prevention programs, this program focused only on alcohol, the use of which is very common in our society.

B. The Alcohol Education Program was not a strict prevention program, for moderate drinking rather than abstinence was the major criterion of success.

C. The study is somewhat dated because the evaluation was completed twelve years ago.

D. The sample is unique – all-male Catholic school located in an upper middle class suburb – and, therefore, caution must be exercised when generalizing the findings to other populations of youth. It is unfortunate that the authors did not conduct a similar evaluation in one of the many other schools in the Boston area which were also using the Alcohol Education Program.

5. An Evaluation of the Effect of a Values-Oriented Drug Abuse Education Program Using the Risk Taking Attitude Questionnaire (Carney, 1971)

From 1968 to 1971 this drug abuse prevention program included students in the fourth, fifth, sixth, and twelfth grades. The experimental classes participated in a values-oriented program which contained both cognitive and affective components integrated within the normal school curriculum. The program stressed the development of decision making skills which the student then used to assess the value

and satisfaction of taking drugs. The program developers interpreted drug use as a way of coping with the world in order to satisfy deeply felt but unfulfilled needs. However, to effectively prevent the behavior, the program emphasized the high risks and low gain from taking drugs as a solution to problems. Instead, the advantages of socially accepted behavior and value systems were examined in order to help the student make the appropriate decision about drug use.

The evaluation, performed by Richard E. Carney (1971), assessed the effectiveness of the program by analyzing student responses to pretest and posttest questionnaires. Carney concluded that the Coronado students in the experimental classes had decreased their use of drugs in relation to their pretest scores and in relation to students who were not in the program. In addition, the experimental students' perceived valuation of more "socially" acceptable coping behavior had increased.

Comments:

A. In his overall conclusion Carney states (1971: 120): "Actual frequency of drug use and more dangerous behaviors tend to be less in experimental Values classes than in control groups." Unfortunately, the data presented do not justify this conclusion. This study suffers from a very fundamental problem – lack of comparability between the experimental and control groups, especially with the sixth grade, junior high, and senior high groups. The author acknowledged that the fourth and fifth grade groups would offer a better test of the drug abuse program than the other grades because of greater numbers (all fourth and fifth grade students were involved), the availability of pretest data for almost all subjects, and the presence of several teachers in several classes (lowering the possible effect of a particular teacher). Once again, however, there was

no information presented on how the assignment of subjects to the experimental groups was made. The results for the fifth grade males and females show that the drug abuse program had no effect on behavior (Carney, 1971:72; 80). The results for the fourth grade males show that the Values class had much higher frequencies of smoking and drinking alcohol and slightly lower frequencies of glue sniffing, taking pills/drugs, and marijuana use; for the fourth grade females the drug program had no effect (Carney, 1971: 87; 97). These results – from the "best" groups of subjects – do not support the author's conclusion.

B. There was no discussion of the 40% drop in subjects from pretest (1328) to posttest (801) and the effect of this drop on the findings.

C. There was no presentation of information on the background characteristics of the subjects so we could determine if these subjects were in some way unique and would thus require caution in generalizing the results to other populations.

6. Experimental Comparison of Four Approaches to Drug Abuse Prevention Among 9th and 11th Graders (Swisher et al., 1971)

The four approaches of this program were: "1. A standard unit in health classes focused on drug abuse. 2. Relationship counseling groups in which the students were allowed to explore the topic of drug abuse in any fashion they chose.... 3. Reinforcement counseling groups that included a counselor and two college-age non-drug-abusing role models.... 4. Reinforcement counseling groups that had a counselor and two college-age ex-drug-abusing role models" (Swisher et al., 1971: 329).

There were six counselors who received 10 hours of training before being assigned randomly to the three counseling approaches. One hundred eight ninth graders were selected randomly to participate in the study. After

selection they were divided up into three levels of intelligence (above average, average, and below average), and then the subjects in each level were assigned randomly into the four groups. The same procedures were used for 108 eleventh graders. All subjects received ten class sessions of the health unit, and, in addition, the subjects in the three counseling groups met once each week for six weeks in their separate groups.

The authors' analyses of the pretests and posttests revealed 1) an increase for all groups in drug knowledge – presumably because the three counseling groups had received the same health unit as the control groups, 2) no change in attitudes toward drugs, and 3) no change in drug using behavior.

Comments:

A. This evaluation has one major flaw. There was no mention of why data were presented for only 137 subjects rather than 216 – a fact apparent only to the reader who bothers to total the "n" columns in the tables. A drop of 37% requires an explanation and discussion of the impact of this drop on the findings.

B. The subjects were divided into three levels of intelligence before assignment. There was, however, no discussion about why this procedure was used.

C. It is difficult to generalize the findings to other populations when no descriptive information on the characteristics of the samples was provided.

7. Alternatives to Drugs – The Student Video Process (Gurgin, 1977)

Funded by the National Institute on Drug Abuse, this project used student production of video tapes as a way to reduce and prevent drug use. From 1972 to 1977, 87 students in Port Washington elementary and secondary schools participated in the project. The participants included students who had been identified by various teachers as problem children with low self-esteem. A closely matched

group of similar students acted as a control group and did not participate in the activities of the project. According to the evaluation of the project, "the basic assumption undergirding the Port Washington Project was that participation in the project would – through a variety of social interaction processes – improve the participants' sense of personal worth or self-esteem and thereby reduce and/or prevent anti-social behavior, especially substance abuse" (Gurgin, 1977: 74). Over the five-year period the participants worked with teachers, paraprofessionals, and community volunteers approximately once a week in order to develop video tape programs of their choice.

The evaluation, performed by Vonnie Gurgin (1977), assessed the effectiveness of the project by analyzing subjects' responses on pretest questionnaires and on posttest questionnaires which were completed at the end of each year during the project's five-year period of operation. The responses to personality and behavior questions indicated that the participants showed increased personal worth and reduced proclivity to abuse drugs in comparison to the matched control group. In addition, the experimental group showed a reduction in other forms of deviant and anti-social behavior, improved personal and social adjustment ratings, and increased academic achievement.

Comments:

A. The introduction to the final report identifies it as a memorandum which "provides an outline sketch of the major evaluative and replicative research findings to date" (Gurgin, 1977: 70). Unfortunately, information provided on the project and the findings is very "sketchy" (in fact, some of our information on the program was obtained during a telephone conversation with the author). For example, there was hardly any information on the selection, characteristics, matching, activities, and specific

findings for the subjects. Our overriding concern in assessing this evaluation is that not enough details were presented to allow for an adequate assessment, and therefore we have had to rely on the author's brief statements of what was done.

B. While we are told that some subjects dropped out when the project had no more to offer them (Gurgin, 1977: 106), there is no discussion of what happened to these students and if they were replaced.

C. Without any information on the subjects, it is impossible to generalize the findings to any other population.

8. The Effect of a Drug Education Program upon Student Drug Knowledge, Drug Usage, and Psychological States (Grizzle, 1974)

Funded by the Law Enforcement Assistance Administration and the North Carolina Law and Order Division, this program established the Charlotte Drug Education Center in order to reduce drug abuse in the public schools of Charlotte, North Carolina. From 1972 to 1974 the Center directed its major efforts at students in fourteen junior and senior high schools in the City. Students in twelve other Charlotte secondary schools did not receive these services and served as a control group. The program developers assumed that students who were in particular psychological or sociological states had a high risk of abusing drugs. These states included rebellion, lack of attachment to school, lack of commitment, boredom, poor parent-child relationship, poor self-image, feelings of hopelessness, inability to cope, and peer pressure. To alleviate these states, the drug education activities tried to develop coping ability, to build interpersonal relationships, and to improve teacher-student communication. The program used a variety of strategies including peer group counseling, rap groups, ombudsman classes, youth groups and clubs, and student-to-student instruction. The program initially provided information about the pharmacology and physiological effects of drugs

in hopes that the increased knowledge would discourage drug use. However, the program deemphasized the information strategy in favor of the other strategies when research results began to show that drug information alone did not deter drug abuse.

The evaluation, performed by Gloria A. Grizzle (1974), assessed the effectiveness of the Center's activities by analyzing students' responses on pretest and posttest questionnaires. The results indicated that a generally higher proportion of students in both the experimental and control schools reported using drugs in 1974 than in 1972. However, the experimental schools reported a smaller increase than the control schools. In regard to psychological or sociological states, changes in the percentages of experimental school students in "high risk" psychological or sociological states compared favorably with changes in the control schools for only the states of "rebellion" and "poor parent-child relationships."

Comments:

A. The author pointed out at the beginning of the paper that the experimental and control schools had not been selected on a random basis. However, to compensate for the lack of random assignment, she presented a thorough analysis of several differences between the two groups and their probable impact on the findings which, overall, would not have accounted for the experimental group's favorable outcome.

B. In light of the elaborate analyses performed in examining differences between the experimental and control groups, it seemed odd to find no such analysis in the discussion of the differences between the two groups in regard to drug use behavior. Only the differences in percentage change between the two groups for various drugs were presented; there were no tests of statistical significance.

C. With qualifications, the author considered the

differential effect of the duration of the drug education program (longer duration demonstrated better effects), the point of intervention (early intervention – junior high – was more effective than later intervention – senior high), and cost effectiveness (the drug education was less costly than other programs in terms of years of addiction prevented).

9. The Nation's Toughest Drug Law: Evaluating the New York Experience (Joint Committee on New York Drug Law Evaluation, 1978)

This evaluation, while not of a program, has been included because it utilized a deterrent strategy. The 1973 revision of the New York State Drug Law raised criminal penalties for the sale and possession of many controlled substances, especially heroin. This law required minimum sentences and mandatory lifetime parole supervision for the most serious offenses while denying plea bargaining. The new drug law had two principal objectives: first, it sought to frighten drug users out of their habit and drug dealers out of their trade with stiff sentences; and second, it hoped to reduce crimes commonly associated with addiction.

The evaluation, performed by the Joint Committee on New York Drug Law Evaluation (1978), used an Interrupted Time-Series Analysis design to measure changes in heroin use between the pre-law and the post-law periods. Using this technique it was possible to infer whether the 1973 law exerted a measurable influence on heroin use. The time series analysis focused primarily on the two indicators of heroin use for which data were consistently available: narcotics-related deaths and reported cases of serum hepatitis. In addition to New York City, data were gathered and analyzed for the State's five largest counties as well as for other east coast cities, Baltimore, Philadelphia, and Washington, D.C. The results indicated that there was no significant decline in either narcotics deaths or serum

hepatitis cases in New York after the 1973 law went into effect.

Comments:

A. Overall, this evaluation appears to be an excellent evaluation. Unlike many program evaluations, the evaluation was well staffed and well funded; also unlike many program evaluations, routinely collected data were available for two indirect measures of narcotics use – deaths due to narcotics use and the incidence of serum hepatitis. In addition to these two measures there were many other types of data gathered (e.g., rates pertaining to reported crime, arrest, bail, trial, sentencing, and length of prison term).

B. Several issues were raised by the evaluation which indicated that the 1973 drug law was not implemented fully. The effectiveness of a deterrent rests upon swift and certain punishment, both of which the New York State criminal justice system was unable to deliver.

C. The committee which undertook the evaluation reached three general observations:

> First, the use of heroin and other opiates is but one element of a larger problem. The misuse of all dangerous drugs – alcohol, cocaine, opiates, and other mood-changing drugs, some prescribed and some sold over the counter – altogether constitutes "the drug problem." Problems with so many components do not yield to one-dimensional solutions.... Second, whether or not illicit drug use is for the most part a medical concern as some contend, it is incontrovertibly deeply rooted in broader social maladies. Narcotics use in particular is intimately associated with, and a part of, a wider complex of problems that include family break-up, unemployment, poor income and education, feeble institutional structures, and loss of hope. The final observation is a corollary of the second: it is implausible that social problems as basic as these can be effectively solved by the criminal law (Joint Committee on New York Drug Law Evaluation, 1978: 30).

Summary of Findings

The comments for each program have pointed out some of the limitations and inadequacies of each of the nine evaluations. Keeping in mind these limitations and reservations, the obvious question to be asked is what these findings tell us about the effectiveness of drug abuse prevention programs. In spite of the small number of cases, Figure 1 suggests some answers to this question. As Figure 1 shows, there were two programs which used only an informational strategy, and both programs were ineffective in preventing drug abuse. In fact, it has been suggested by both Stuart (1974) and Grizzle (1974) that there may be a positive association between increased drug knowledge and increased drug use.

There were three programs which used a values-oriented strategy; two programs were effective and one was ineffective. The fact that one of the effective programs (Williams et al., 1968) had a very good evaluation design leads us to conclude that values-oriented strategies hold some promise and deserve further experimentation.

Figure 1 shows that there was only one program which used solely a counseling strategy. In fact, the program employed three counseling techniques: relationship counseling, reinforcement counseling with two non-drug-abusing role models, and reinforcement counseling with two ex-drug-abusing role models (Swisher et al., 1971). The evaluation – a good evaluation marred by a failure to account for a considerable drop in the number of subjects for which data were presented – found that all three of these techniques were ineffective. Two additional forms of counseling, peer counseling and rap groups, were both included among the strategies used in another program which was found to be effective (Grizzle, 1974), leaving open the possibility that one or both of these counseling techniques may be found to be effective as independent strategies.

Figure 1: Findings about Program Effectiveness

Strategy	Findings about Program* Effectiveness	Type of Drug	Target Population
Informational	Ineffective for 2 programs (#1 & #2)	Drugs (general)	7th & 9th graders; 8th graders
Values-Oriented	Effective for 2 programs (#3 & #4)	Drugs (general); Alcohol	9th – 12th graders; 11th graders
	Ineffective for 1 program (#5)	Drugs (general)	4th & 5th graders
Counseling	Ineffective for 1 program (#6)	Drugs (general)	9th & 11th graders
Student-Participation-in-Alternatives	Effective for 1 program (#7)	Drugs (general)	6th – 12th graders
Info/C/S-P	Effective for 1 program (#8)	Drugs (general)	7th – 12th graders
Deterrence ('73 N.Y. drug law)	Ineffective for 1 program (#9)	Heroin	Population of N.Y.State

*Programs:

#1. Teaching Facts About Drugs: Pushing or Preventing (Stuart, 1974)

#2. Drug Education Program for Secondary School Students (Weaver and Tennant, 1973)

#3. Alternatives and Values Clarification (Slimmon, 1973)

#4. Alcohol Education Program (Williams et al., 1968)

#5. An Evaluation of the Effect of a Values-Oriented Drug Abuse Education Program Using the Risk Taking Attitude Questionnaire (Carney, 1971)

#6. Experimental Comparison of Four Approaches to Drug Abuse Prevention Among 9th and 11th Graders (Swisher et al., 1971)

#7. Alternatives to Drugs – The Student Video Process (Gurgin, 1977)

#8. The Effect of a Drug Education Program upon Student Drug Knowledge, Drug Usage, and Psychological States (Grizzle, 1974)

#9. The Nation's Toughest Drug Law: Evaluating the New York Experience (Joint Committee on New York Drug Law Evaluation, 1978)

One program used student-participation-in-alternatives as its sole strategy, and the evaluation (Gurgin, 1977) found the program to be effective. Although the type of activity used by this program – the production of video tapes – is unique, the strategy is supported by the positive findings for another program (Grizzle, 1974) which utilized student-participation-in-alternatives along with informational and counseling strategies.

Figure 1 also shows that only one of the nine programs, the Charlotte Drug Education Center, used a combination of strategies, and they included informational (which was discontinued), counseling (peer group counseling and rap groups), and student-participation-in-alternatives (ombudsman classes, student-to-student instruction, and youth groups and clubs) strategies. The evaluation (Grizzle, 1974) found the program to be effective, and both the large sample size (experimental group = 13,919 and control group = 11,657) and the thorough efforts to rule out alternative explanations for the findings add credibility to this evaluation's conclusions. These findings, in turn, lend further support to the student-participation-in-alternatives strategy and the peer group and rap group counseling techniques (which were probably similar to the student-participation-in-alternatives strategy because they were group activities and did not have a therapeutic emphasis).

The last of the nine evaluations was not an evaluation of a program but of the impact of a deterrent strategy – the 1973 New York State drug law, "The Nation's Toughest Drug Law" (Joint Committee on New York Drug Law Evaluation, 1978). While the evaluation found that the 1973 drug law was ineffective, the authors stated that this finding resulted from the criminal justice system's inability to implement the law so that it would function as a deterrent.

VII. EVALUATION ISSUES

This assessment represents little more than a cursory examination of 52 evaluations. We had neither the resources nor the information necessary to assess thoroughly each drug abuse prevention program evaluation. For many programs a thorough assessment would have involved tracking down evaluators and program personnel in order to obtain additional information. However, using the documents available to us, we have been able to address several major issues pertinent to these evaluations. In this section our purpose is to review these issues.

Theoretical Assumptions

We assume that individuals who work in the field of drug abuse prevention would most like to know how to prevent drug abuse. Yet, ironically, while in the best position to build knowledge about the causes of drug abuse, they appear indifferent to such efforts – as evidenced by their lack of attention to specifying the relationships between strategies and the presumed causes of drug abuse. Program planners, administrators, and evaluators will find a recently developed typology of cause-focused strategies of delinquency prevention (Hawkins et al., 1980) to be a useful tool for conceptualizing and specifying the links between strategies and causes. They also need to find out and take into consideration what others have done and with what results in order to build on knowledge which has already been accumulated.

In specifying the reasons for proposing a strategy, thought should be given to justifying the duration of the strategy – whether it is an informational strategy presented one class period each week for ten weeks (Stuart, 1974), six hours of values-clarification (Slimmon, 1973), or counseling groups meeting once a week for six weeks (Swisher et al., 1971). If one's ideas about drug abuse recognize the strong influence of peers, justification

would need to be provided for the optimism that one week of a particular strategy will have lasting influence. In particular, the justification should include how much time is required to implement the strategy and how long the effect will last. Both Slimmon (1973) and Grizzle (1974) have noted that the longer the duration of the strategy the greater its effectiveness. Also in this regard, it may be that a particular strategy will work best with intermittent reinforcements occurring after a certain amount of time has elapsed. Not until evaluators make more frequent use of follow-up testing will we be able to determine the long-range effectiveness of various prevention strategies.

Another issue to be addressed concerns the recipients of the strategy – the target population. Based on the discussion of what causes drug abuse, justification should be provided for the selection of the target population. For example, one's theory might suggest that a strategy will work best for boys at one age/grade and for girls at a later age/grade.

Quality of Evaluation Design

A good evaluation design is essential in order to have confidence in the findings about program effectiveness, yet we found that slightly more than half (54%) of the evaluations we reviewed had inadequate designs. The best way to insure an adequate design is to obtain assistance from an experienced evaluator during a program's planning stage. For example, by involving an evaluator from the start, matters pertaining to the selection and random assignment of subjects (where feasible) can be incorporated into the program. Evaluations which have been tacked on to the end of a program's operation seldom provide adequate information about program effectiveness.

Outcome Measurement

As was made clear in the section on outcome measurement, we believe that a measurement of drug abusing

behavior must be included in order to know about the ability of a program to prevent drug abuse. An increasingly common technique for measuring such behavior is the anonymous self-report questionnaire. Once again, regardless of the measurement, the evaluation should build on the experience of others, including obtaining samples of instruments which others have used.

Summary

In conclusion, we hope the reader has learned the following from this review and assessment: 1) adequate evaluations of drug abuse prevention programs can be performed, but few are; 2) program strategies and target populations need to be discussed in greater detail and linked to the presumed causes of drug abuse; and 3), although too few adequate evaluations exist to speak confidently about what works, values-oriented and student-participation-in-alternatives strategies appear to warrant further experimentation.

APPENDIX A: Literature Search and Review

Our literature search utilized the following sources:

1. Card Catalog, Suzzallo Library, University of Washington. Headings searched: Alcohol, Alcohol and Youth, Alcohol Programs, Alcoholism, Drug Abuse, Drugs and Youth, Drug Programs.

2. Sociological Abstracts (1971-1978). Headings searched: Alcoholism, Alcohol Drinking, Drug Use, Drug Addiction.

3. Psychological Abstracts (1971-1978). Headings searched: Alcohol Drinking Patterns, Alcoholism, Drug Use, Drug Addiction, Drug Education, Drug Rehabilitation.

4. Compiled bibliographies pertaining to drug use (e.g., Advena, 1972; Advena, 1973; Alcohol Health and Research World, 1973).

Only books published after 1960 and articles published after 1971 were included in the search, and 603 references were obtained, excluding 35 duplicate references. We included articles published after 1971 to keep the review current and to keep the number of articles to be reviewed to a manageable size; books published after 1960 were included in order not to overlook any major works on the subject. In our review of the 603 references we found 52 evaluations of drug abuse prevention programs for juveniles which had been performed for the purpose of determining program effectiveness, and these are the subject of this assessment.

APPENDIX B: Figure 2: Summary Description of 52 Evaluations of Drug Abuse Prevention Programs

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM'S SUCCESS
Amendolara '73	Drugs (general)	Informational	7th graders	Yes	Attitudes	No	Attitudes=Successful
Barresi & Gigliotti '75	Drugs (general)	Informational	10th graders	Yes	Attitudes Knowledge	No	Attitudes=Unsuccessful [1] Knowledge=Unsuccessful
Benson et al. '72	Drugs (general)	Student-participation-in-alternatives (Transcendental Meditation)	14 yrs. and older (mostly adults)	No	Use Attitudes	Yes	Use=Successful Attitudes=Successful
Brand '76	Drugs (general)	Values-oriented	7th through 9th graders	Yes	Attitudes	No	Attitudes=Unsuccessful
Brown & Klein '75	Drugs (general)	Informational	Not specified	No	Use Attitudes	Yes	Use=Unsuccessful Attitudes=Unsuccessful
Carney '71	Drugs (general)	Values-oriented	4th graders 5th graders 6th graders 12th graders	Possibly for 4th & 5th grade samples; No for 6th & 12th grade samples.	Use Attitudes	Yes	Use=Successful Attitudes=Successful
Carolina Ed. Cons. '73	Drugs (general)	Informational	9th through 12th graders	No	Knowledge Attitudes	No	Knowledge=Unsuccessful Attitudes=Unsuccessful

[1]Students with inconsistent attitudes about drug use were more likely to be influenced by objective informational programs than students with deeply ingrained attitudes.

APPENDIX B: Figure 2: (continued)

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM'S SUCCESS
Carpenter '77	Drugs (general)	Values-oriented Informational Student-participation-in-alternatives Counseling	7th, 8th & 9th graders	No	Attitudes Knowledge Use	Yes	Attitudes=Successful Knowledge=Successful Use=Successful
CASPAR '78	Alcohol	Values-oriented Informational	7th through 12th graders	No	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful
Dade Co. '74	Drugs (general	Informational Values-oriented Student-participation-in-alternatives Counseling	6th through 12th graders	Possibly	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful
Dearden & Jekel '71	Drugs (general)	Values-oriented	9th & 10th graders	No	Use Attitudes	Yes	Use=Successful Attitudes=Successful
Ebel et al. '75	Drugs (general)	Values-oriented	14 through 16 years old	Yes	Attitudes	No	Attitudes=Successful
English '72	Drugs (general)	Informational	9th through 12th graders	Possibly	Attitudes	No	Attitudes=Successful
Geis '69	Drugs (general)	Informational	7th & 8th graders	Possibly	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful
Grizzle '74	Drugs (general)	Counseling Student-participation-in-alternatives Informational	7th through 12th graders	Yes	Use Knowledge Attitudes	Yes	Use=Successful Knowledge=Successful Attitudes=Unsuccessful

APPENDIX B: Figure 2: (continued)

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM'S SUCCESS
Gurgin '77	Drugs (general)	Student-participation-in-alternatives	6th through 12th graders	Possibly	Use Attitudes	Yes	Use=Successful Attitudes=Successful
Horan et al. '73	Drugs (general)	Counseling	Adults (teachers)	No	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful
Irwin '70	Tobacco	Informational	7th graders	No	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful
Joint Comm. on N.Y. Drug Law Eval. '78	Heroin	Other (severe criminal penalties)	Population of New York State	Yes	Use[2] (Indirectly measured)	Yes	Use=Unsuccessful
Kline '72	Drugs (general)	Informational	7th & 8th graders	No	Use	Yes	Use=Successful
Lewis '72	Drugs (general)	Informational	9th through 12th graders	No	Use	Yes	Use=Unsuccessful
Macro Systems '72	Drugs (general)	Informational	Elementary grades through high school	No	Use Attitudes Knowledge	Yes	Use=Unsuccessful Attitudes=Successful Knowledge=Successful

[2]Heroin use was indirectly measured by deaths due to narcotics cases of hepatitis and admissions to hospitals.

APPENDIX B: Figure 2: (continued)

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM'S SUCCESS
Mascoll '76	Alcohol	Informational Values-oriented Student-participation-in-alternatives	8th graders	Yes	Knowledge Attitudes Intended Use	No	Knowledge=Successful Attitudes=Successful Intended Use=Unsuccessful
McClellan '75	Drugs (general)	Values-oriented Student-participation-in-alternatives	9th through 12th graders	No	Use Attitudes	Yes	Use=Unsucessful Attitudes=Successful
Morgan & Hayward '76	Drugs (general)	Informational	14 through 17 years old	Yes	Attitudes	No	Attitudes=Unsuccessful
Myers '74	Drugs (general)	Values-oriented Informational	10th graders	Yes	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful
N.Y. State Office of Drug Abuse '77	Drugs (general)	Values-oriented Student-participation-in-alternatives Other (communication skills development) Counseling	9th through 12th graders	No	Use Attitudes Other (school performance, attendance, interpersonal relationships)	Yes	Use=Successful Attitudes=Successful Other=Successful
O'Rourke & Barr '74	Drugs (general)	Not specified	High school (exact ages not specified)	No	Attitudes	No	Attitudes=Successful for males =Unsuccessful for females

APPENDIX B: Figure 2: (continued)

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM's SUCCESS
Pegram '72	Drugs (general)	Informational Values-oriented	5th through 12th graders	No	Use Attitudes Knowledge	Yes	Use=Successful Attitudes=Unsuccessful Knowledge=Successful
Pethel '71	Drugs (general)	Informational Student-participation-in-alternatives	9th graders	No	Knowledge Attitudes	No	Knowledge=Unsuccessful Attitudes=Unsuccessful
Richardson et al. '72	Drugs (general)	Informational	5th graders	No	Attitudes	No	Attitudes=Unsuccessful
Safron & Konstanzer '75	Drugs (general)	Counseling Values-oriented	7th through 12th graders	No	Use Attitudes Other (school performance, behavior, attendance)	Yes	Use=Successful Attitudes=Succcessful Other=Successful
Sieber et al. '76	Drugs (general)	Values-oriented	4th, 5th, 6th graders	No	Use Attitudes Knowledge	Yes	Use=Successful Attitudes=Successful Knowledge=Unsuccessful
Slimmon '73	Drugs (general)	Values-oriented[3] Informational Student-participation-in-alternatives	9th through 12th graders	Yes	Use	Yes	Use=Successful

[3]Only the values-oriented strategy was analyzed.

APPENDIX B: Figure 2: (continued)

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM'S SUCCESS
Sorenson & Joffe '75	Drugs (general)	Values-oriented	16 yrs. old	No	Attitudes Knowledge Use	Yes	Attitudes=Successful Knowledge=Successful Use=Successful
Stoessel '74	Drugs (general)	Informational Values-oriented Counseling Student-participation-in-alternatives	7th through 12th graders	Possibly	Attitudes	No	Attitudes=Successful for values-oriented and student-participation-in-alternatives programs; unsuccessful for informational and counseling programs.
Stuart '74	Drugs (general)	Informational	7th & 9th graders	Yes	Use Knowledge Attitudes	Yes	Use=Unsuccessful Knowledge=Successful Attitudes=Unsuccessful
Swanson '73	Drugs (general)	Values-oriented Informational	Adults (teachers) & elementary school students	No	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful
Swisher & Crawford '71	Drugs (general)	Informational	9th through 12th graders	No	Use Knowledge Attitudes	Yes	Use=Unsuccessful Knowledge=Successful Attitudes=Unsuccessful
Swisher & Horan '72	Drugs (general)	Values-oriented	College students	Yes	Attitudes	No	Attitudes=Successful
Swisher & Horman '70	Drugs (general)	Informational	College students	No	Attitudes Knowledge	No	Attitudes=Successful Knowledge=Successful
Swisher & Piniuk '73	Drugs (general)	Values-oriented Student-participation-in-alternatives Informational	Kindergarten through 12th graders	No	Use Attitudes Knowledge	Yes	Use=Successful only for values-oriented strategy. Attitudes=Successful Knowledge=Successful

APPENDIX B: Figure 2: (continued)

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM'S SUCCESS
Swisher et al. '72	Drugs (general)	Counseling	9th & 11th graders	Yes	Use Attitudes Knowledge	Yes	Use=Unsuccessful Attitudes=Unsuccessful Knowledge=Successful
Tarnai et al. '79	Alcohol	Values-oriented	4th through 12th graders	Yes	Knowledge Attitudes	No	Knowledge=Successful Attitudes=Successful for 6th through 12th graders; unsuccessful for 4th & 5th graders
Tennant et al. '73	Drugs (general)	Informational	5th through 12th graders	No	Use Attitudes	Yes	Use=Unsuccessful Attitudes=Unsuccessful
Thomas et al. '71	Drugs (general)	Other (transmission of information and attitudes from parents to children)	Children in high school	Possibly	Knowledge Attitudes	No	Knowledge=Unsuccessful Attitudes=Unsuccessful
Ungerleider & Burnford '72	Drugs (general)	Student-participation-in-alternatives Counseling	Not specified	No	Use Attitudes	Yes	Use=Successful Attitudes=Successful
Warner et al. '73	Drugs (general)	Counseling Values-oriented Informational	9th graders	Yes	Attitudes	No	Attitudes=Unsuccessful
Weaver & Tennant '73	Drugs (general)	Informational	8th graders	Possibly	Use Knowledge	Yes	Use=Unsuccessful Knowledge=Successful

APPENDIX B: Figure 2: (continued)

EVALUATOR	TYPE OF DRUG	STRATEGY	AGE/GRADE OF TARGET POP.	CAN CONCLUSIONS BE DRAWN FROM EVAL. DESIGN?	OUTCOME MEASURE	DOES OUTCOME MEASURE RELATE TO DRUG BEHAV.?	EVALUATOR'S JUDGMENT ABOUT PROGRAM'S SUCCESS
Williams et al. '68	Alcohol	Values-oriented	11th graders	Yes	Use Attitudes Knowledge	Yes	Use=Successful Attitudes=Successful Knowledge=Successful
Wolk & Tomanio '74	Drugs (general)	Values-oriented	Junior and senior high school students Adults	No	Attitudes	No	Attitudes=Successful
Wong & Barbatis '76	Drugs (general)	Informational	Students (age not specified)	No	Knowledge	No	Knowledge=Successful Attitudes=Successful

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